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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,518	07/22/2003	Miki Nagano	116625	5827
25944 7590 08/04/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
TRAN, TUYETLENT				
ART UNIT		PAPER NUMBER		
2179				
MAIL DATE		DELIVERY MODE		
08/04/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/623,518

Applicant(s)

NAGANO ET AL.

Examiner

TUYETLIEN T. TRAN

Art Unit

2179

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 7-15 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 7-15 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the following communication: Amendment filed 04/06/09.

This action is made final.

2. Claims 5, 7-15 and 31 are pending in the case. Claim 5 is an independent claim.

Claim Objections

3. Claim 5 is objected to because of the following informalities: it is suggested that the term "at least one terminal" in lines 36-37 should be changed to "the at least one terminal"; the term "the full-screen capture", "the partial-screen capture" in lines 37-38 should be changed to "the full-screen capture mode", "the partial-screen capture mode" respectively.
4. Claim 7 is objected to because of the following informalities: it is suggested that the term "the terminal" in lines 2, 4 should be changed to "the at least one terminal" to be consistent with the claimed language. The limitation "one of the network interactive display device" in line 4 does not have support for it in the claim; it should perhaps be changed to "the projector".
5. Claim 9 is objected to because of the following informalities: the limitation "the display screen" in line 2 does not have support for it in the claim. It is suggested that it should be changed to "the display screen of the display".
6. Claim 11 is objected to because of the following informalities: the limitation "one of the network interactive display device" in line 2 does not have support for it in the claim. The term "the terminal" in line 3 should be changed to "the at least one terminal" to be consistent with the claimed language.
7. Claim 12 is objected to because of the following informalities: it is suggested that the term "the terminal" in lines 2, 4 should be changed to "the at least one terminal" to be consistent with the claimed language. The term "the whole" should be changed to "a whole". The term "the display screen of the terminal" does not have support for it in the claim.

8. Claim 13 is objected to because of the following informalities: it is suggested that the term "the terminal" in lines 2, 4 should be changed to "the at least one terminal" to be consistent with the claimed language. The term "the display screen of the terminal" does not have support for it in the claim.

9. Claim 14 is objected to because of the following informalities: it is suggested that the term "the window" in line 3 should be changed to "a window"; the term "the terminal" in lines 3, 4 should be changed to "the at least one terminal". It is not clear whether the term "a display control unit" in line 4 is referring to "a display control unit" in line 40 of claim 5. Appropriate correction is required.

10. Claim 15 is objected to because of the following informalities: it is suggested that the term "the terminal" in lines 2, 3 should be changed to "the at least one terminal" to be consistent with the claimed language.

11. Claim 31 is objected to because of the following informalities: it is suggested that the term "the terminal" in lines 3, 4 should be changed to "the at least one terminal" to be consistent with the claimed language. The term "the capture function" in line 2 does not have support for it in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 5, 7-9, 12, 14, 15 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta (Pub No US 2001/0050679 A1; hereinafter Shigeta) in view of Estevez et al. (US 2003/0017846 A1; hereinafter Estevez).

As to claim 5, Shigeta teaches:

A display device connected to at least one terminal via a network (e.g., see Fig. 1; wherein image display 30 is connected to a plurality of image signal source 1a to 1c, see Fig. 1; notes devices 113, 110 are connected through 1394 hub 108, see Fig. 10), which has a terminal display (e.g., see Fig. 10 and [0129], [0137]; the image sources includes devices such as personal computers 104, 110), and a screen capture processor capturing a whole or a part of the screen of the terminal display (e.g., see Fig. 2 and [0067]; wherein unit 6a, 6b of the image signal sources can create image signals for the display device according to the attributes of the display device), the display device comprising:

a data storage storing a display status management file for managing a display status of the terminal display (e.g., see Fig. 1, 7 and [0077]; per-area display attributes information storing unit 41) including a capture area management flag (e.g., see Fig. 7, [0098], [0101], [0133]; the display attribute information table including resolution attribute such as QXGA is for full screen), the capture area management flag indicating whether a screen capture mode is a full-screen capture mode or a partial-screen capture mode of the screen of the terminal display

(e.g., see Fig. 7, [0098], [0101], [0133]; the resolution attribute such as QXGA is for full screen; SGA, SDTV is for partial-screen);

a communication unit sending the display status management file to at least one terminal (e.g., see Fig. 1 and [0101]; the image display device 30 communicate the display attributes information to devices on the network) and receiving a captured image data (e.g., see Fig. 2 and [0087], [0090], [0102]; the image signal sources output the image information according to the display attribute and send to the display device), which has been captured by the full-screen capture or be the partial-screen capture in accordance with the capture area management flag, from the at least one terminal (e.g., see Fig. 2 and [0087], [0090], [0102]; the image signal sources convert the image information into the defined resolution);

a control unit synthesizing the captured image data into single screen multi-window format data to be displayed on a display (e.g., see Fig. 1 and [0087]; the obtained image signals are synthesized into signals for the image display unit 36 of the display device); and

the display displaying a synthesized image data synthesized by the display control unit (e.g., see Fig. 1 and [0087]; the obtained image signals are synthesized into signals for the image display unit 36 of the display device).

Shigeta does not expressly teach that the display device is a projector.

In the same field of endeavor of displaying data from multiple sources, Estervéz teaches a projector connected to at least one terminal via a network, which has a terminal display and a screen capture processor capturing a whole or a part of the screen of the terminal display (e.g., see Figs. 1-6, [0005]).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the multi-screen display function on a projector in

view of Estevez because Shigeta suggests to the skilled artisan that the multi-screen display functions implemented on the display device can be used for a projector (e.g., see Shigeta [0006]; wherein there is demand for display devices such as projector to have multi-screen display functions). One would have been motivated to make such a combination is to achieve the ability to display images of different image signal sources using a projector.

As to claim 7, Shigeta further teaches wherein the terminal that provides the captured image data to be displayed on the display screen of the display is selected in a two-way communication of the communication unit (e.g., communication unit 40 and Image/audio receiving unit 32, see Fig. 1; note that device 30 can transmit and receive signal, e.g., see step S2 and S5 in Fig. 3) by one of the network interactive display device and the terminal (e.g., a mouse or digitizer, see [0089]).

As to claim 8, Shigeta further teaches wherein the display control unit has an expansion display function for expanding a predetermined window from among a plurality of windows forming the multi-window screen displayed on the display screen of the display (e.g., see Figs. 6 and 8).

As to claim 9, Shigeta teaches the limitations of claim 5 for the same reasons as discussed with respect to claim 5 above. Shigeta fails to expressly teach a single-window screen selection function for switching the display screen from a predetermined window from among a plurality of windows forming the multi-window screen displayed on the display screen of the display to a single-window full screen. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the a single-window function for switching the display screen from a predetermined window from among a plurality of

windows forming a multi-window screen displayed on the display screen of the display to a single-window full screen, in view of Shigeta, because Shigeta suggests to the skilled artisan that the size and position of the display area can be changed (e.g., see [0089], [0112]). One would have been motivated to make such a combination is to optimize the full resource of the display and to get user's attention on the window of interest.

As to claim 12, Shigeta further teaches wherein the captured image data received from the terminal is obtained by designating the whole or a portion of the display screen of the terminal (e.g., see Fig 6).

As to claim 14, Shigeta teaches wherein a controller receives, through the communication unit (e.g., unit 40 and 32 in Fig 1), the captured image data (e.g., [0087]), having the converted size equal to the display size of the window assigned to the terminal, from the terminal to which the window area size is sent (e.g., see [0091], [0102]), and the controller controls the display control unit to synthesize the received captured image data into the single screen multi-window format data to be displayed on the display screen of the display (e.g., see Fig. 8 and [0087]).

As to claim 15, Shigeta further teaches wherein an aspect ratio of the window assigned to the terminal to be displayed is equalized to an aspect ratio of the display screen of the display of the terminal (e.g., note that display attributes for each area also relates to aspect ratio, see [0090] and [0091]).

As to claim 31, Shigeta further teaches wherein when the captured image data captured using the capture function are of a part of the screen of the terminal display (e.g., see 12a, 12b in Fig. 2), a partial size of the part is sent from the terminal to the projector and the

display size of the window assigned to the terminal is determined on the basis of the partial size instead of the received screen size of the terminal display (e.g., see Fig. 6 and [0102]).

14. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta in view of Estevez and further in view of Matsumoto et al. (Patent No US 6,473,088 B1, hereinafter Matsumoto).

As to claim 10, Shigeta and Estevez teach the limitations of claim 5 for the same reasons as discussed with respect to claim 5 above. However, Shigeta and Estevez fail to expressly teach an erase function for erasing a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display. Matsumoto, though, teaches wherein the display control unit (e.g., display drive controller 900 in Fig. 1) has an erase function for erasing a predetermined window from among a plurality of windows forming a multi-window screen displayed on the display screen of the display (e.g., window area for input 4 is erased or minimized when the control unit detects a power saving mode, see Fig. 13 and col. 12, lines 63-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta, Estevez and Matsumoto before him at the time the invention was made to have utilized the erase function as taught by Matsumoto to the multi-area display system as taught by Shigeta and Estevez to improve the visibility of the display screen by erasing the display area of invalidating windows.

As to claim 11, Shigeta teaches a network interactive display device and the terminal are communicated in a two-way communication of the communication unit (e.g., see [0087], [0123], Fig. 10). Shigeta teaches interactively selecting a predetermined window from among

the list of windows displayed in the display device (e.g., see Figs. 6, 8). Matsumoto further teaches wherein the predetermined window is selected by one of the network interactive display device and the terminal (e.g., display pointer 702) in a two-way communication of the communication unit (e.g., two-way communication between source devices 101 to 104 and bus controller 1000 to the display device 900, see Fig. 1). Thus, combining Shigeta, Estevez and Matsumoto would meet the claimed limitations for the same reasons as discussed in claim 10 above.

15. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta in view of Estevez further in view of Mondal (Pub No US 2003/0110244 A1, hereinafter Mondal).

As to claim 13, Shigeta and Estevez teach the limitations of claim 5 for the same reasons as discussed with respect to claim 5 above. However, Shigeta and Estevez fail to expressly teach that the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal. Mondal, though, teaches the captured image data received from the terminal is obtained by detecting and capturing only a change on the display screen of the terminal (e.g., see [0022]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Shigeta, Estevez and Mondal before him at the time the invention was made to have utilized the method and function of only transmitting the changes in display data as taught by Mondal to the multi-area display system as taught by Shigeta to reduce the amount of data transmitted to the maintenance computing system so as to reduce the affect on network bandwidth (e.g., see Mondal [0022]).

Response to Arguments

16. Applicant's remarks filed on 04/06/09 have been fully considered but are moot in view of new ground of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

It is noted that any citation to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TuyetLien (Lien) T. Tran whose telephone number is 571-270-1033. The examiner can normally be reached on Mon-Friday: 7:30 - 5:00 (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on 571-272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. T. T./
Examiner, Art Unit 2179

**/Weilun Lo/
Supervisory Patent Examiner, Art Unit 2179**